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Memorandum for Forest Supervisor, Santa Barbara National Forest; Re: Forest insect conditions, Pine Valley Area, Monterey Division

J.M. Miller

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MEMORANDUM FOR FOREST SUPERVISOR

SANTA BARBARA NATIONAL FOREST

RE: FOREST INSECT CONDITIONS, PINE VALLEY AREA, MONTEREY DIVISION

by

J. M. MILLER
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Berkeley, California
November 23, 1932

MEMORANDUM FOR FOREST SUPERVISOR,

SANTA BARBARA NATIONAL FOREST,

FOREST INSECT CONDITIONS, PINE VALLEY AREA, MONTEREY DIVISION

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MEMORANDUM FOR FOREST SUPERVISOR,
SANTA BARBARA NATIONAL FOREST,
RE FOREST INSECT CONDITIONS, PINE VALLEY AREA, MONTEREY DIVISION

Following the recommendations of District Ranger DeLapp in his insect control report of September 29, an examination was made of the Pine Valley area on November 2, for the purpose of determining the status of the existing bark beetle infestations. It was possible to spend only one day on the area, the trip being made from the Chews Ridge guard station. Due to fog and a light rain, visibility conditions were too poor to permit a satisfactory topographic survey of the area. However, on the trail in from the Tassajara Road to the lower end of Pine Valley enough was seen of the infestation types to give a fair impression of conditions, and a number of dead and dying trees were examined so that the insects responsible for the damage were definitely determined. Mr. DeLapp accompanied me on this trip and cooperated in every way possible to make the brief time that was available as effective as possible.

Type Description of the Area

The area under consideration includes both the small valley in the upper Carmel drainage (Secs. 4 and 9, T 19 S, R 3 E, MDM) known as Pine Valley and the canyon slopes extending to the south and east. This covers about 1,000 acres in which the predominating conifer is ponderosa pine, occurring in almost pure stands of very good quality. Attached to this memorandum are several photographs which illustrate the type found in the Pine Valley area proper and in the surrounding country. Outside of the immediate ponderosa area the cover consists of brush species, with Coulter pine and oak on the better sites. This mixed type containing Coulter pine is widely distributed throughout the general region surrounding the valley. As both Coulter pine and ponderosa pine are subject to attack by the same species of bark beetles, it is obvious that the infestation in Pine Valley is not isolated, and that some of the surrounding area will have to be taken into consideration if control plans are formulated.

Past Infestations in Area

No records are available of old bark beetle infestations in this area, and conditions in past years can only be inferred from the evidence of old killings represented by snags. That these past losses have been more than negligible is indicated by the remains of several fairly large groups of dead and down trees near the lower end of Pine Valley. There are also a number of dead snags scattered about the area that seem to have been killed at about the same time. Judging from the age of this material there appears to have been a flare-up of bark beetle infestation in the area about 1924 and 1925, the evidence indicating that the greater part of the losses were due to the western pine beetle. These losses subsided in subsequent years and only endemic conditions were prevalent until the season of 1931.

Infestation Developing During Seasons of 1931 and 1932

The course of bark beetle infestations during the past two seasons has been quite similar to those in pine areas of many other parts of the state. The season of 1931 was characterized by an outbreak of an engraver beetle, Ips confusus, which topkilled great numbers of trees. This infestation subsided early in the season of 1932, and has been followed by an increase on the part of the western pine beetle which gained momentum toward the end of the past summer.

The Ips infestation was prevalent in both ponderosa and Coulter pine. Of the hundreds of topkilled trees, many are still surviving regardless of the dead tops, and will probably continue to do so unless reattacked by the western pine beetle or flathead borers. One small ponderosa pine of about 16 inches dbh was cut down in Pine Valley to check up on insects which had killed about one-half of the crown in 1931. It was found that the injury was due to Ips confusus, that the brood had emerged, and that the lower half of the bole and crown was in fairly good growing condition. No other insects had followed up the attack during 1932. Another Coulter pine was examined near the trail, about four miles from Pine Valley, in which the entire crown had faded. It was found that both the top and limbs had been killed by the engraver beetle in the fall or winter of 1931, but that the bole was still green. A few flathead attacks were starting, however, and the tree will die eventually. It was obvious that very little Ips infestation was present in the surrounding area in 1932; otherwise the insect would have reattacked a badly weakened tree like this one.

The western pine beetle was present in some numbers during the season of 1931, as shown by the frequency of dead trees in the old red-topped stages. Much of the infestation of that season seems to have occurred in trees where the initial attack of Ips killed the tops. In 1932, however, the western pine beetle has been attacking trees largely on its own initiative, although there is evidence that flatheads are supplementing the infestation somewhat by attacking concurrently in the top and limbs. The western pine beetle has been increasing throughout the season, and has built up into an aggressive overwintering infestation that is approaching the epidemic status. This is indicated by the high proportion of trees in the early phases of fading foliage, and by several trees found on the trip that were in the early stages of attack and still retained green foliage. Under conditions of poor visibility, with only part of the area covered, 40 trees were counted in the Pine Valley watershed which had been killed in 1932. This included one group of six and another of eight recently-faded trees. Although the basis for an estimate is unsatisfactory, I should place the number of 1932 overwintering trees in the watershed at 50.

Control Measures

If control of this infestation is considered for the coming winter, it will be necessary to treat not only the infested trees in the Pine Valley watershed but those that occur in surrounding territory as well, extending the treated area out from one to two miles to assure protection of the ponderosa pine stand in the valley proper. This will involve the treatment before April 15, 1933, of approximately 50 trees in the Pine Valley area and an equal number in the surrounding watersheds, or the treatment of 100 trees over an area of about 5,000 acres, much of which is a non-timbered type.

Under the conditions that exist, the cost of the project will be relatively high, and I do not see how the job can be handled for an average cost of less than ten dollars per tree unless a great amount of the labor is contributed. The trees in and around Pine Valley will not present great difficulties, but those in surrounding territory will have to be treated under conditions that involve high control costs. The scattered distribution of the trees in steep, brush-covered country, and the probable fire hazard, requiring special precautions in burning, are the more serious factors. Another item increasing cost is that camps will have to be supplied by pack train. As a further handicap, no insect control work had been previously carried on in this territory; and it will be necessary to train spotters and local labor, or else import a crew, before a project of this kind can be effectively accomplished. I should estimate the minimum allotment necessary for the project at $1,000.

The question of values that are threatened by the present infestation should be given some consideration before an undertaking of this character is recommended. As Pine Valley is without transportation except by trail, and the commercial value of the timber is not a factor, the principal use of the area is for general watershed and recreational purposes. No special-use areas are being developed. As long as this restricted use of the area continues, an infestation which kills only a small per cent of the pine stand probably cannot be rated as a serious threat to values. However, an infestation which may deplete the body of ponderosa pine to the extent of 50 per cent of the forest cover--as some other western pine beetle infestations have done on other areas--would doubtless be a matter for some concern because of aesthetic considerations, the increase of the fire hazard, and the decrease of recreational values.

At present the western pine beetle is only approaching an epidemic condition, and the per cent of stand that has been killed is relatively low. The extent to which it may increase if no control work is done cannot be predicted. Although the infestation shows aggressive tendencies at the close of this season, factors which indicate that it may not continue are favorable tree-growth conditions during the past season and the dying-down of the engraver beetle outbreak.

Control Measures

If control of this infestation is considered for the coming winter, it will be necessary to treat not only the infested trees in the Pine Valley watershed but those that occur in surrounding territory as well, extending the treated area out from one to two miles to assure protection of the ponderosa pine stand in the valley proper. This will involve the treatment before April 15, 1933, of approximately 50 trees in the Pine Valley area and an equal number in the surrounding watersheds, or the treatment of 100 trees over an area of about 5,000 acres, much of which is a non-timbered type.

Under the conditions that exist, the cost of the project will be relatively high, and I do not see how the job can be handled for an average cost of less than ten dollars per tree unless a great amount of the labor is contributed. The trees in and around Pine Valley will not present great difficulties, but those in surrounding territory will have to be treated under conditions that involve high control costs. The scattered distribution of the trees in steep, brush-covered country, and the probable fire hazard, requiring special precautions in burning, are the more serious factors. Another item increasing cost is that camps will have to be supplied by pack train. As a further handicap, no insect control work had been previously carried on in this territory; and it will be necessary to train spotters and local labor, or else import a crew, before a project of this kind can be effectively accomplished. I should estimate the minimum allotment necessary for the project at $1,000.

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Initiation of control during the coming winter and spring period would be the only course for playing safe with the present situation. Such a program would not be sound unless subsequent maintenance work is also provided for as a measure for holding down the infestation in case it shows any tendency to come back during future years.

The other alternative is to await developments and take a chance on natural factors checking the present infestation before it becomes epidemic. If this plan is followed, the condition of the infestation should again be determined before the close of the 1933 season, as a basis for formulating control plans if action then seems necessary.

J. M. MILLER,
Senior Entomologist.

Berkeley, Calif.,
November 23, 1932.

Ponderosa pine type bordering Pine Valley.
Forest Service Photo.

Lower part of Pine Valley, showing part of small meadow, ponderosa pine type and surrounding brush area.
Forest Service Photo.

Two views in canyon above Pine Valley showing quality of ponderosa pine, which forms an almost pure type in this part of the area. Forest Service Photo.

Two views in watersheds surrounding Pine Valley area, showing distribution of Coulter pine on the brushy slopes. This tree is a host of the western pine beetle and considerable infestation was noted in these outlying areas. For this reason the Pine Valley infestation is not isolated, and if control work is undertaken this surrounding country would have to be worked to insure protection.

Photo Forest Service.